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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

RALIS, STEPHEN J

ART UNIT	PAPER NUMBER
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3742

MAIL DATE	DELIVERY MODE
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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,908	Applicant(s) JIANG ET AL.	
	Examiner STEPHEN J. RALIS	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant is respectfully requested to provide a location within the disclosure to support any further amendments to the claims due to when filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06 ("Applicant should specifically point out the support for any amendments made to the disclosure.").

Response to Amendment/Arguments

3. Applicant's arguments filed 10 March 2009 have been fully considered but they are not persuasive as set forth below.

Specification

4. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.

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(f) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(g) BRIEF SUMMARY OF THE INVENTION.

(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(i) DETAILED DESCRIPTION OF THE INVENTION.

(j) CLAIM OR CLAIMS (commencing on a separate sheet).

(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

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- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (l) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

The Specification is objected to because it does meet the requirements of a Specification as mentioned above. Applicant is reminded that no new matter can be entered with the submittal of a new Specification. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

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was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the instant case, the recitation to “a control means for controlling opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38 otherwise said valve is controlled to be closed” (emphasis on “otherwise said valve is controlled to be closed”) is deemed new matter. The examiner can find disclose to “a control means for controlling opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38” in the Abstract, page 1, lines 21-23 and original claim 1. There is no disclosure to the control means controlling the value to otherwise be closed if the ratio between the flow rate (g/min) of the pump and the power of the heating means is not in a range of 1:20 to 1:38. Therefore, the recitation to such is deemed new matter.

7. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instant case recites the limitation “a control means for controlling opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38 *otherwise said valve is controlled to be closed*”. The addition of the new limitation (previously italicized and underlined) requires the examiner to reexamine how the control means opens the control valve if the recited

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ratio between the flow rate (g/min) of the pump and the power of the heating means (i.e. 1:20 to 1:38) exists and closes the control valve if the recited ratio between the flow rate (g/min) of the pump and the power of the heating means does not exist. The examiner can only find enabling disclosure to the ratio between the flow rate (g/min) of the pump and the power of the heating means being controlled/adjusted by: adjusting both the power of the heating element of the steam generator and the flow rate of the pump; keeping the power of the heating element at a fixed value and only adjusting the flow rate of the pump; or vice versa (i.e. keeping the flow rate of the pump at a fixed value and only adjusting the power of the heating element) (page 1, line 27 – page 2, line 2). Applicant explicitly discloses the ratio between the flow rate (g/min) of the pump and the power of the heating means being controlled by: flow rate and heating means; flow rate only; and heating rate only with no disclosure to the valve controlling any ratio between the flow rate (g/min) of the pump and the power of the heating means by an opening or closing. Hence, the examiner can find no enabling disclosure to how the control means controls the opening and closing of a valve dependent on the ratio and otherwise closing it if the ratio condition is not met. Therefore, the recitation to “a control means for controlling opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38 otherwise said valve is controlled to be closed” is deemed non-enabling due to the amendment to the claims

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Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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11. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Netten et al. (U.S. Patent No. 5,642,579) in view of van der Meer (U.S. Patent No. 5,042,179) and Maykemper (U.S. Patent No. 2,615,265).

Netten et al. disclose a steam ironing device (Title) comprising a steam iron (see Figure 1, 6, 7) having a housing, a heatable soleplate (2) at the bottom side of the housing and at least one steam outlet opening (steam vents 20), the ironing device comprising a water supply device (water tank 8), a steam generator (steam chamber 12) for generating steam, heating means (heating element 18) for heating the steam generator (steam chamber 12), a flow path between the steam generator (steam chamber 12) and the steam outlet openings (steam vents 20); an electric pump (water pump 10) for delivering water from the water supply device (water reservoir 4) to the steam generator (steam chamber 12), characterized in that the ironing device (Title) comprises control means (controller 16 and thermostat not shown): for controlling the power of the heating means (heating element 18) of the steam generator (steam chamber 12); for controlling the flow rate of the pump (water pump 10), and a ratio between the flow rate (g/min) of the pump and the power heating means being about 1:31.25 (48 g/min to 1500 W equals approximately 1:31.25) (pages 1-2, paragraph 14).

Netten et al. further disclose a steam generator can alternatively be detached from the system, connected via a hose and the steam being controlled is passed into the steam duct (22) via a controllable steam valve under control of a signal having similar function as the pump signal PS (column 5, lines 2-6)

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Netten et al. disclose all of the limitations of the claimed invention, as previously set forth, except for at least one atomization device being part of the steam outlet openings; and a valve provided in the flow path between the steam generator and the steam outlet; the control means for controlling the opening and closing of the valve, the valve being open if the ratio between the flow rate (g/min) of the pump and the power heating means is in a range of 1:20 to 1:38 or in a range of 1:23 to 1:30 to control the wetness of steam delivered by the steam outlet device.

However, having an atomizing device in the steam outlet after the generation of steam is known in the art. Maykemper, for example, teaches the use of an atomization device (column 7, line 50 - column 8, line 48) to provide a mechanism that prevents water from passing from the pressing face of the soleplate and excessively wetting the material, thereby improving the quality of the steam ironing process.

Similarly, the use of a valve provided in the flow path between the steam generator and the steam outlet as well as the valve having a control means for opening and closing the valve if the ratio between the flow rate (g/min) of the pump and the power heating means is in a range of 1:20 to 1:38 is known in the art. Van der Meer, for example, teaches a steam iron comprising a steam generator (40) having a steam valve (46) being used to open and close the steam pipe between the steam generator (40) and the steam passages (not shown) in the soleplate (20) (column 5, lines 37-67; column 8, line). In addition, Van der Meer teaches a second heating element (41) providing the heat for the steam generator (4) with the flow rate of steam starting at 35g/min at 600W and being maintained at 15 g/min at 600W with the additional setting

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of 20 or 25 g/min to 600W (column 11, line 47 – column 12, lines 22) (35 g/min to 600 W equals approximately 1:17.14; 15 g/min to 600 W equals approximately 1:40; 20g/min to 600 W equals approximately 1:30; 25 g/min to 600 W equals approximately 1:24). Van der Meer further teaches the advantage of such a configuration provides for the steam generator to be heated with the steam valve closed during a break or standby period until a considerable excess pressure relative to ambient pressure and a corresponding temperature prevail within the steam generator as well as for providing for the steam delivery level to be maintained during the ironing cycle (column 3, lines 5-40), thereby improving the efficiency of the steam iron device.

With respect to limitation of “a control means for opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38 otherwise said valve is controlled to be closed”, van der Meer explicitly teaches an iron comprising a control means (microprocessor 155). Applicant has recited a “control means for...” essentially invoking 35 U.S.C. 112, sixth paragraph requiring the examiner to refer the specification/disclosure to what exactly “a control means for...” is. The examiner finds disclosure to control means (7) on the bottom of page 3 of the specification as well as in Figures 1-3. In addition, the examiner finds disclosure to “the control device controls the power of the heating means of the steam generator, the flow rate of water to the steam generator, and the position of a 3-way valve” (page 3, lines 8-10). Furthermore, applicant discloses “**The desired water-to-steam ratio can be obtained by adjusting both the power of the heating element of the steam generator and the flow rate of the pump. However, it is also**

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possible to keep the power of the heating element at a fixed value and only to adjust the flow rate of the pump, or vice versa, to obtain the desired ratio" (page 1, line 27 – page 2, line 2). Therefore the control means for attaining the ratio between the flow rate and power can be controlled by: adjusting both the power of the heating element of the steam generator and the flow rate of the pump; keeping the power of the heating element at a fixed value and only to adjusting the flow rate of the pump; or vice versa (i.e. **keeping the flow rate of the pump at a fixed value and only adjusting the power of the heating element**).

Van de Meer teaches a control valve (46) being opened and closed based on usage of the device (column 8, line 17 - column 13, line 2). In addition, van der Meer teaches a second heating element (41) providing the heat for the steam generator (4) with the flow rate of steam starting at 35g/min at 600W and being maintained at 15 g/min at 600W with the additional setting of 20 or 25 g/min to 600W (column 11, line 47 – column 12, lines 22) (35 g/min to 600 W equals approximately 1:17.14; 15 g/min to 600 W equals approximately 1:40; 20g/min to 600 W equals approximately 1:30; 25 g/min to 600 W equals approximately 1:24). **Van de Meer explicitly teaches the ratio between the flow rate and power being attained by adjusting the on/off time of the heating element to keep the ratio between the flow rate and power at the desired ratio**, as asserted above (column 10, lines 13 - column 12, line 58). In addition, if van de Meer is not controlling the temperature of the heating element during use, the value is controlled to be closed (column 10, lines 63 - column 11, line 3). Therefore since van der Meer discloses a control means (microprocessor 155) controlling a control program (see

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Figures 3a-3d) that opens and closes a control valve (46) and the steam program delivering steam of 35g/min at 600W and being maintained at 15 g/min at 600W with the additional setting of 20 or 25 g/min to 600W (column 11, line 47 – column 12, lines 22) **by adjusting the on/off time of the heating element to keep the ratio between the flow rate and power at the desired ratio**, van der Meer fully meets "a control means for opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38" given its broadest reasonable interpretation.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the steam outlet openings of Netten et al. with an atomization device as taught by Maykemper in order to provide a mechanism that prevents water from passing from the pressing face of the soleplate and excessively wetting the material, thereby improving the quality of the steam ironing process. It would have further been obvious to one of ordinary skill in the art at the time of the invention was made to modify Netten et al. with the steam valve in the steam pipe between the steam generator and the steam outlet passages in order to provide for the steam generator to be heated with the steam valve closed during a break or standby period until a considerable excess pressure relative to ambient pressure and a corresponding temperature prevail within the steam generator as well as for providing for the steam delivery level to be maintained during the ironing cycle, thereby improving the efficiency of the steam iron device.

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12. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Netten et al. (U.S. Patent No. 5,642,579) in view of van der Meer (U.S. Patent No. 5,042,179) and Maykemper (U.S. Patent No. 2,615,265) as applied to claims 1 and 2 above, and further in view of Leta (U.S. Publication No. 2006/0213092).

Netten et al. in view of van der Meer and Maykemper discloses all of the limitations, as previously, except for the atomizing device comprising at least one nozzle provided in a front part of the housing; the atomizing device comprising at least one nozzle provided in a tip area of the soleplate; the soleplate being provided with at least one discharge opening which is connected to the steam generator through a second flow path in which a steam chamber is provided; the valve opening the second flow path if the ratio between the flow rate of the pump and the power of the heating means is greater than 1:45.

However, a steam iron comprising a nozzle configuration in a front part of the housing, at least one nozzle provided in a tip area of the soleplate, the soleplate being provided with at least one discharge opening which is connected to the steam generator through a second flow path in which a steam chamber is provided is known in the art. Leta, for example, teaches a steam ironing apparatus comprising a nozzle (218, 318) in a front part of a housing as well a narrowing perforations (206, 306) in the front tip of the soleplate equivalent, given its broadest reasonable interpretation, to nozzles (see Figure 3-9). In addition, Leta teaches a flow path (213/231; 313/331) having a second flow path (second conduits 211, 311) being connected to nozzle (218) with the second flow path (second conduits 211, 311) having a steam chamber (distribution chamber 232, 332) in

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the flow path (211) between the flow path (213/231; 313/331) and the narrowing perforations (206, 306). Leta also teaches a valve (228) or a first valve second valve configuration (328, 329) controlling the flow between nozzle (218, 318) and narrowing perforations (206, 306) (page 3, paragraph 34 – page 4, paragraph 48). Leta further teaches the advantage of such a configuration provides that ability to provide a higher moisture content of the steam at the front portion of the flat iron than the central portion of the flat iron, thereby providing the ability to soften the fibers to a suitably greater extent in view of boosting the ironing effect (page 1, paragraph 5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Netten et al. in view of van der Meer and Maykemper with the nozzles in the front portion of the housing, the front portion tip of the soleplate as well as the valve and second steam chamber in a second conduit of Leta in order to provide a higher moisture content of the steam at the front portion of the flat iron than the central portion of the flat iron, thereby providing the ability to soften the fibers to a suitably greater extent in view of boosting the ironing effect.

With respect to the limitation of the valve opening the second flow path if the ratio between the flow rate of the pump and the power of the heating means is greater than 1:45, van der Meer discloses a number of preferred ratios of flow rate to power of the heating element ratios (column 11, line 47 – column 12, lines 22). In addition, Leta specifically teaches the diversion of the steam from the steam generating chamber to either the narrowing perforations (206) or the nozzle (218) depending on the setting of the valve (228) (page 3, paragraph 41). To provide the valve opening the second flow

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path if the ratio between the flow rate of the pump and the power of the heating means is greater than 1:45 would have been a mere engineering expediency as van der Meer clearly discloses varying the flow rate to power ratio and Leta further teaches varying the flow between two flow paths depending on the requirements.

13. To the degree it can be argued that van der Meer" does not disclose "a control means for opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38", the additional rejection is provided as set forth below:

14. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Netten et al. (U.S. Patent No. 5,642,579) in view of van der Meer (U.S. Patent No. 5,042,179), Vogelmann (U.S. Patent No. 5,536,375) and Maykemper (U.S. Patent No. 2,615,265).

Netten et al. disclose a steam ironing device (Title) comprising a steam iron (see Figure 1, 6, 7) having a housing, a heatable soleplate (2) at the bottom side of the housing and at least one steam outlet opening (steam vents 20), the ironing device comprising a water supply device (water tank 8), a steam generator (steam chamber 12) for generating steam, heating means (heating element 18) for heating the steam generator (steam chamber 12), a flow path between the steam generator (steam chamber 12) and the steam outlet openings (steam vents 20); an electric pump (water pump 10) for delivering water from the water supply device (water reservoir 4) to the

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steam generator (steam chamber 12), characterized in that the ironing device (Title) comprises control means (controller 16 and thermostat not shown): for controlling the power of the heating means (heating element 18) of the steam generator (steam chamber 12); for controlling the flow rate of the pump (water pump 10), and a ratio between the flow rate (g/min) of the pump and the power heating means being about 1:31.25 (48 g/min to 1500 W equals approximately 1:31.25) (pages 1-2, paragraph 14).

Netten et al. further disclose a steam generator can alternatively be detached from the system, connected via a hose and the steam being controlled is passed into the steam duct (22) via a controllable steam valve under control of a signal having similar function as the pump signal PS (column 5, lines 2-6)

Netten et al. disclose all of the limitations of the claimed invention, as previously set forth, except for at least one atomization device being part of the steam outlet openings; and a valve provided in the flow path between the steam generator and the steam outlet; the control means for controlling the opening and closing of the valve, the valve being open if the ratio between the flow rate (g/min) of the pump and the power heating means is in a range of 1:20 to 1:38 or in a range of 1:23 to 1:30 otherwise the valve is controlled to be closed.

However, having an atomizing device in the steam outlet after the generation of steam is known in the art. Maykemper, for example, teaches the use of an atomization device (column 7, line 50 - column 8, line 48) to provide a mechanism that prevents water from passing from the pressing face of the soleplate and excessively wetting the material, thereby improving the quality of the steam ironing process.

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However, a valve provided in the flow path between the steam generator and the steam outlet as well as the valve having a control means for opening and closing the valve if the ratio between the flow rate (g/min) of the pump and the power heating means is in a range of 1:20 to 1:38 is known in the art. Van der Meer, for example, teaches a steam iron comprising a steam generator (40) having a steam valve (46) being used to open and close the steam pipe between the steam generator (40) and the steam passages (not shown) in the soleplate (20) (column 5, lines 37-67; column 8, line). In addition, Van der Meer teaches a second heating element (41) providing the heat for the steam generator (4) with the flow rate of steam starting at 35g/min at 600W and being maintained at 15 g/min at 600W with the additional setting of 20 or 25 g/min to 600W (column 11, line 47 – column 12, lines 22) (35 g/min to 600 W equals approximately 1:17.14; 15 g/min to 600 W equals approximately 1:40; 20g/min to 600 W equals approximately 1:30; 25 g/min to 600 W equals approximately 1:24). Van der Meer further teaches the advantage of such a configuration provides for the steam generator to be heated with the steam valve closed during a break or standby period until a considerable excess pressure relative to ambient pressure and a corresponding temperature prevail within the steam generator as well as for providing for the steam delivery level to be maintained during the ironing cycle (column 3, lines 5-40), thereby improving the efficiency of the steam iron device.

Similarly, Vogelmann teaches a steam generating apparatus comprising a flow restrictor (62) being started and stopped by an electrically operated valve (63) under control of a microprocessor based controller (30) (column 3, line 26 – column 4, line 5;

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column 11, lines 35-40; column 12, lines 17-57) to control the flow rate of fluid/water during operation. Vogelmann further teaches the advantage of such a configuration provides a mean to avoid/prevent damage to the boiler and other parts, thereby increasing the operational longevity of the apparatus.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the steam outlet openings of Netten et al. with an atomization device as taught by Maykemper in order to provide a mechanism that prevents water from passing from the pressing face of the soleplate and excessively wetting the material, thereby improving the quality of the steam ironing process. In addition, it would have further been obvious to one of ordinary skill in the art at the time of the invention was made to modify Netten et al. with the steam valve in the steam pipe between the steam generator and the steam outlet passages in order to provide for the steam generator to be heated with the steam valve closed during a break or standby period until a considerable excess pressure relative to ambient pressure and a corresponding temperature prevail within the steam generator as well as for providing for the steam delivery level to be maintained during the ironing cycle, thereby improving the efficiency of the steam iron device. Furthermore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Netten et al. with the computer controlled valve control of Vogelmann in order to provide a means to avoid/prevent damage to the boiler and other parts, thereby increasing the operational longevity of the apparatus.

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15. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Netten et al. (U.S. Patent No. 5,642,579) in view of van der Meer (U.S. Patent No. 5,042,179), Vogelmann (U.S. Patent No. 5,536,375) and Maykemper (U.S. Patent No. 2,615,265) as applied to claims 1 and 2 above, and further in view of Leta (U.S. Publication No. 2006/0213092).

Netten et al. in view of van der Meer, Vogelmann and Maykemper discloses all of the limitations, as previously, except for the atomizing device comprising at least one nozzle provided in a front part of the housing; the atomizing device comprising at least one nozzle provided in a tip area of the soleplate; the soleplate being provided with at least one discharge opening which is connected to the steam generator through a second flow path in which a steam chamber is provided; the valve opening the second flow path if the ratio between the flow rate of the pump and the power of the heating means is greater than 1:45.

However, a steam iron comprising a nozzle configuration in a front part of the housing, at least one nozzle provided in a tip area of the soleplate, the soleplate being provided with at least one discharge opening which is connected to the steam generator through a second flow path in which a steam chamber is provided is known in the art. Leta, for example, teaches a steam ironing apparatus comprising a nozzle (218, 318) in a front part of a housing as well as narrowing perforations (206, 306) in the front tip of the soleplate equivalent, given its broadest reasonable interpretation, to nozzles (see Figure 3-9). In addition, Leta teaches a flow path (213/231; 313/331) having a second flow path (second conduits 211, 311) being connected to nozzle (218) with the second flow path

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(second conduits 211, 311) having a steam chamber (distribution chamber 232, 332) in the flow path (211) between the flow path (213/231; 313/331) and the narrowing perforations (206, 306). Leta also teaches a valve (228) or a first valve second valve configuration (328, 329) controlling the flow between nozzle (218, 318) and narrowing perforations (206, 306) (page 3, paragraph 34 – page 4, paragraph 48). Leta further teaches the advantage of such a configuration provides that ability to provide a higher moisture content of the steam at the front portion of the flat iron than the central portion of the flat iron, thereby providing the ability to soften the fibers to a suitably greater extent in view of boosting the ironing effect (page 1, paragraph 5). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Netten et al. in view of van der Meer, Vogelmann and Maykemper with the nozzles in the front portion of the housing, the front portion tip of the soleplate as well as the valve and second steam chamber in a second conduit of Leta in order to provide a higher moisture content of the steam at the front portion of the flat iron than the central portion of the flat iron, thereby providing the ability to soften the fibers to a suitably greater extent in view of boosting the ironing effect.

With respect to the limitation of the valve opening the second flow path if the ratio between the flow rate of the pump and the power of the heating means is greater than 1:45, van der Meer discloses a number of preferred ratios of flow rate to power of the heating element ratios (column 11, line 47 – column 12, lines 22). In addition, Leta specifically teaches the diversion of the steam from the steam generating chamber to either the narrowing perforations (206) or the nozzle (218) depending on the setting of

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the valve (228) (page 3, paragraph 41). To provide the valve opening the second flow path if the ratio between the flow rate of the pump and the power of the heating means is greater than 1:45 would have been a mere engineering expediency as van der Meer clearly discloses varying the flow rate to power ratio and Leta further teaches varying the flow between two flow paths depending on the requirements.

Remarks

16. With respect to applicants' reply/argument that applicant need not comply with the Office standard for specification, the examiner respectfully disagrees. Applicant asserts that the MPEP § 608.01(a) states that headings are not required. MPEP § 608.01(a) states "The following order of arrangement of specification elements is preferable in framing the nonprovisional specification and each of the lettered items should appear in upper case, without underlining or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading." Again, it is applicants' responsibility to place an application in a condition for allowance. This condition would encompass the instant invention being conveyed to one of ordinary skill in the art in a way/standard that is known in the art. The Office currently has a standard, as asserted above, and the examiner further asserts that applicant has many pending applications at the Office that have complied with the Office standard. Therefore, the examiner maintains the objection to the specification and respectfully reasserts that appropriate correction is required.

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17. With respect to applicant's reply/argument that van de Meer does not teach "a control means for opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38 otherwise said valve is controlled to be closed", the examiner respectfully disagrees. Van der Meer explicitly teaches an iron comprising a control means (microprocessor 155). Applicant has recited a "control **means for...**" essentially invoking 35 U.S.C. 112, sixth paragraph, requiring the examiner to reference the specification/disclosure to what exactly "a control means for..." is. The examiner finds disclosure to control means (7) on the bottom of page 3 of the specification as well as in Figures 1-3. In addition, the examiner finds disclosure to "the control device controls the power of the heating means of the steam generator, the flow rate of water to the steam generator, and the position of a 3-way valve" (page 3, lines 8-10). Furthermore, applicant discloses "**The desired water-to-steam ratio can be obtained by adjusting both the power of the heating element of the steam generator and the flow rate of the pump. However, it is also possible to keep the power of the heating element at a fixed value and only to adjust the flow rate of the pump, or vice versa, to obtain the desired ratio**" (page 1, line 27 – page 2, line 2). Therefore the control means for attaining the ratio between the flow rate and power can be controlled by: adjusting both the power of the heating element of the steam generator and the flow rate of the pump; keeping the power of the heating element at a fixed value and only adjusting the flow rate of the pump; or vice versa (i.e. ***keeping the flow rate of the pump at a fixed value and only adjusting the power of the heating element***).

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Van de Meer teaches a control valve (46) being opened and closed based on usage of the device (column 8, line 17 - column 13, line 2). In addition, van der Meer teaches a second heating element (41) providing the heat for the steam generator (4) with the flow rate of steam starting at 35g/min at 600W and being maintained at 15 g/min at 600W with the additional setting of 20 or 25 g/min to 600W (column 11, line 47 – column 12, lines 22) (35 g/min to 600 W equals approximately 1:17.14; 15 g/min to 600 W equals approximately 1:40; 20g/min to 600 W equals approximately 1:30; 25 g/min to 600 W equals approximately 1:24). **Van de Meer explicitly teaches the ratio between the flow rate and power being attained by adjusting the on/off time of the heating element to keep the ratio between the flow rate and power at the desired ratio**, as asserted above (column 10, lines 13 - column 12, line 58). In addition, if van de Meer is not controlling the temperature of the heating element during use, the value is controlled to be closed (column 10, lines 63 - column 11, line 3). Therefore since van der Meer discloses a control means (microprocessor 155) controlling a control program (see Figures 3a-3d) that opens and closes a control valve (46) and the steam program delivering steam of 35g/min at 600W and being maintained at 15 g/min at 600W with the additional setting of 20 or 25 g/min to 600W (column 11, line 47 – column 12, lines 22) **by adjusting the on/off time of the heating element to keep the ratio between the flow rate and power at the desired ratio**, van der Meer fully meets "a control means for opening and closing a valve if the ratio between the flow rate (g/min) of the pump and the power of the heating means is in a range of 1:20 to 1:38 otherwise said valve is controlled to be closed" given its broadest reasonable interpretation.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. RALIS whose telephone number is (571)272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J Ralis/
Examiner, Art Unit 3742

Stephen J Ralis
Examiner
Art Unit 3742

SJR
June 12, 2009

/TU B HOANG/
Supervisory Patent Examiner, Art Unit 3742